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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/715,335	11/17/2000	Kevin Lefebvre	10005281-1	6005

7590 01/13/2004

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER	
QUILLEN, ALLEN E	

ART UNIT	PAPER NUMBER
2676	10

DATE MAILED: 01/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/715,335	LEFEBVRE ET AL.	
	Examiner	Art Unit	
	Allen E. Quillen	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 November 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-61* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-61* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1. Claims 4, 7, 9, 12, 43, 48 are amended; claims 52-61 are added. Applicant's arguments with respect to claims 1-61 have been considered but are moot in view of the new ground(s) of rejection. All claims are pending.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claim 1, 15, 18, 21, 43, 48 are provisionally rejected under the judicially created doctrine of provisional obviousness-type double patenting as being unpatentable over claims 1, 7, 11 and 12 of copending Application No. 09/715,253, Claim 2 of copending Applications 09/715892, Claim 1 of 09/715,746, Claim 1 of 09/715600, Claim 1 of 09/715882 (U.S. Patent 6,621,500), Claims 1, 7-8 of 09/715232, (U.S. Patent 6,680,739). This is a provisional double patenting rejection since the conflicting claims have not in fact been patented. The conflicting claims are not identical; they are patentably distinct from each other because current application 09/715,746 additionally recites "plurality of display devices". Applications No. 09/715253 and Application No. 09/715335 do not recite "plurality of display devices". At the time of the invention, it would have been obvious to one skilled in the art of computer graphics processing to use a plurality of displays to achieve a larger-sized display. Co-pending Applications 09/715892, 09/715232, 09/715882, 09/715600 cite digital video data stream and pixel processing. At the time of the invention, it would have been obvious to one skilled in the art of computer graphics data processing to use pixel processing with graphics and video data processors in combination with video and graphics data. Co-pending Applications 09/715892 and 09/715600 cite stereo image display. At the time of the invention, it would have been obvious to one skilled in the art of computer graphics data processing to use pipeline processing in combination with stereo display.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-8, 10, 12, 14-16, 18-19, 21-23, 25-28, 30-54, 56-59, 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacInnis, et al, U.S. Patent 6,573,905 in view of Jenkins, U.S. Patent 6,111,582.

6. Regarding claim 1, representative of claims 15, 18, 21, 43-46, 48-51, MacInnis discloses a graphical display system (Figures 1-7, 48, 60-64, 69-70, 73-74; Column 6, lines 21, 29-33), comprising: a first graphics pipeline (Figure 69, Column 112, lines 24-33) configured to receive graphical data transmitted from a graphics application ([Claim 44] *Graphics data for display is.... Direct Draw...Microsoft...read from memory,* Column 5, lines 25-28) and to render said graphical data received by said first graphics pipeline (Figure 69, Column 112, lines 24-33); a second graphics pipeline configured to receive graphical data transmitted from said graphics application and to render said graphical data received by said second graphics pipeline (Figure 69, Column 112, lines 24-33); a display device configured to display an image (Figure 62, element 2518); and a compositor (Figure 4, element 108, Column 10, lines 41-43) configured to receive said graphical data rendered by said first graphics pipeline and said graphical data rendered by said second graphics pipeline, said compositor further configured to interface said graphical data received by said compositor with said display device, wherein said image is based on said graphical data received by said compositor (Figures 62, 69; Column 52, lines 18-19; Column 52, lines 19-23; Column 46, lines 1-7);

[Claim 18] the compositor (graphics and video, Figure 4, element 108, Column 7, lines 66 through Column 8, line 13) configured to receive said first and second graphical data portions from said first and second pipelines and to interface said first and second graphical data portions with said display device (Figures 62, 69, HDTV, Column 112, lines 24-32) wherein a first portion of said image is based on said first graphical data portion and wherein said first and second graphics pipelines render in parallel (Column 112, lines 24-32).

[Claim 21] receiving a graphical command, said graphical command including graphical data (*start code...processes the incoming video elementary stream in accordance with the type of start code...start code...stores incoming video elementary stream in the external memory,* Column 77, lines 17-22; 41-52; *header and graphics content,* Column 109, lines 50-61);

[Claims 43-46, 48, 51] logic configured to receive graphical data defining a graphical object (*2D, windows descriptors, x, y,* Column 15, lines 51-53; Column 16, lines 36-65 Column 59, line10; Column 50, lines 19-59) to be displayed in a single graphical window (Column 13, lines 18-22), the logic configured to control said first graphics pipeline such that said first graphics pipeline renders, based on said graphical data, a first portion of said graphical object without rendering a second portion of said graphical object, said logic further configured to control said second graphics pipeline such that said graphics pipeline renders, based on said graphical data, said second portion of said graphical object without rendering said first portion (*blending, layers, at some point, there can be a single image representing the lower layers,* (Column 47, line 60-65), Column 45, line 55 through Column 51, line 33).

MacInnis does not disclose and a second portion of said image is based on said second graphical data portion, rendering said first and second graphical portions of the image. Jenkins teaches multiple pipelines (Column 60, lines 29-63); wherein said first and second images define at least a portion of a image; second rendering means for rendering a respective second portion of said graphical data, said second rendering means including a plurality of pipeline means for rendering said second graphical data portion in parallel and a compositing means for compositing said second rendered portion (Figures 1-4, Figure 13A, *sub-images, being handled by one of the sub-image processors,* Column 17, lines 52-55). The motivation for combining

multiple pipeline processing with multiple sub-images with respective rendering means is for efficient use of available connection bandwidth and allow rapid synchronization with broadcast event stream, load balancing, computational efficiency, level of detail and resolution suited to human needs (Column 114, lines 51-54, 63-63; Column 117, lines 1-6, 24, 38-40, 48-50, 63-67, Column 118, lines 1-9, 17-28, 36-38, 55-65). Jenkins is evidence that at the time of the invention it would have been obvious to one skilled in the art of computer graphics processing to combine the benefits of parallel pipeline processing, as MacInnis discloses, with multiple sub-images rendering, as Jenkins teaches, for performance and display efficiencies.

MacInnis discloses 3D and 2D effects on graphics surfaces (Column 66, lines 41-42) but does not disclose three dimensional graphical object. Jenkins teaches three dimensional object (Column 46, line 9). The motivation for combining 3D graphics surfaces with 3D object is for image generation for visible surface determination using a graphics pipeline in which primitives undergo geometric processing with a goal of real time performance (Column 1, lines 27-40). Jenkins is evidence that at the time of invention, it would have been obvious to combine 3D graphics surfaces with 3D objects to achieve the goal of real time 3D image generation.

7. Regarding claim 2, MacInnis discloses the system of claim 1, wherein said first graphics pipeline and said second graphics pipeline simultaneously and in parallel process said graphical data rendered by said first and second graphics pipelines (see above, Column 112, lines 24-32).

8. Regarding claim 3, representative of claims 23, 25, 26, 30, 47, 57, MacInnis discloses the system of claim 1, further comprising: an input device configured to receive an input from a user (Column 32, lines 25-28), wherein at least one of said graphics pipelines is configured to selectively super-sample (*post filtering, digitized analog video capture*, Column 5, lines 58-61; Column 33, lines 27-30) said graphical data rendered by said at least one graphics pipeline based on said input (Column 8, lines 7-9).

9. Regarding claim 4, representative of claims 6, 10, 14, 16 and 19, MacInnis discloses the system of claim 1, wherein: said first graphics pipeline is configured to super-sample a first portion of a graphical object, said first graphical object portion defined by said graphical data rendered by said first graphics pipeline (Column 6, lines 29-41; Column 13, lines 17-29; Column 97, lines 42-67; Column 109, lines 19-21; Column 111, lines 49-52; Column 112, lines 54-59) window; said second graphics pipeline is configured to super-sample a second portion of said graphical object, said second graphical object portion defined by said graphical data rendered by said second graphics pipeline; and said compositor is configured to average data values of said first and second graphical object portions and to transmit said averaged data values to said display device (see above; Column 10, lines 41 through Column 11, line 39).

10. Regarding claim 5, representative of claim 22, MacInnis discloses the system of claim 1, wherein said compositor is configured to interface said graphical data received by said compositor with said display device via a scanning process (Figure 3, peripherals, Column 5, lines 17-18, Column 6, lines 67 through Column 7, line 2).

11. Regarding claim 7, representative of claims 8, 27, 28, 40, MacInnis discloses the system of claim 1, further comprising a third graphics pipeline configured to receive a plurality of graphics commands (Column 59, lines 20-23; Figure 69, Column 112, lines 24-33), said third graphics pipeline configured to transmit each of said graphics commands including three-dimensional graphical data (Column 59, line 9) to at least one of said first and second graphics pipelines (Figures 61-63, Column 96, lines 59-61; Column 97, lines 5-7; Column 66, lines 41-42), said third graphics pipeline further configured to render two-dimensional graphical data (*2D, windows descriptors, x, y,* Column 15, lines 51-53; Column 16, lines 36-65 Column 59, line10) associated with the remaining graphics commands wherein said compositor is further configured to receive said two-dimensional graphical data rendered by said third graphics pipeline and to interface said two-dimensional graphical data with said display device;

[claim 27] and wherein said first and second graphics pipelines are included in said other graphics pipelines (Figures 3, 4, 69; Column 112, lines 48-53), in a frame buffer (Column 32, lines 25-28, 46-54).

12. Regarding claim 12, representative of claims 39, 41, 42, MacInnis discloses the system of claim 1, wherein said graphics application is configured to produce graphical data (Column 5, lines 25-28) that defines a object within said image (Column 50, lines 19-59), wherein said graphical data rendered by said first graphics pipeline defines a first portion of said object and wherein said graphical data rendered by said second graphics pipeline defines a second portion of said object (*windows descriptors, x, y, window controller,* Column 15, lines 51-53); [Claim

42] without rendering said first portion of said graphical object, (*blending, layers, at some point, there can be a single image representing the lower layers,* (Column 47, line 60-65), Column 45, line 55 through Column 51, line 33).

MacInnis does not disclose a second portion of said object in said image is based on said second graphical data portion, rendering said first and second graphical portions of the image. Jenkins teaches multiple pipelines (Column 60, lines 29-63); wherein said first and second images define at least a portion of a image; second rendering means for rendering a respective second portion of said graphical data, said second rendering means including a plurality of pipeline means for rendering said second graphical data portion in parallel and a compositing means for compositing said second rendered portion (Figures 1-4, Figure 13A, *sub-images, being handled by one of the sub-image processors,* Column 17, lines 52-55). The motivation for combining multiple pipeline processing with multiple sub-images with respective rendering means is for efficient use of available connection bandwidth and allow rapid synchronization with broadcast event stream, load balancing, computational efficiency, level of detail and resolution suited to human needs (Column 114, lines 51-54, 63-63; Column 117, lines 1-6, 24, 38-40, 48-50, 63-67, Column 118, lines 1-9, 17-28, 36-38, 55-65). Jenkins is evidence that at the time of the invention it would have been obvious to one skilled in the art of computer graphics processing to combine the benefits of parallel pipeline processing, as MacInnis discloses, with multiple sub-images rendering, as Jenkins teaches, for performance and display efficiencies.

MacInnis discloses 3D and 2D effects on graphics surfaces (Column 66, lines 41-42) but does not disclose three dimensional graphical object. Jenkins teaches three dimensional object (Column 46, line 9). The motivation for combining 3D graphics surfaces with 3D object is for

image generation for visible surface determination using a graphics pipeline in which primitives undergo geometric processing with a goal of real time performance (Column 1, lines 27-40). Jenkins is evidence that at the time of invention, it would have been obvious to combine 3D graphics surfaces with 3D objects to achieve the goal of real time 3D image generation.

13. Regarding claim 31, representative of claims 33, 35, 37, MacInnis discloses the system of claim 1, wherein each of said pipelines is implemented in hardware (Column 51, lines 26-29).

14. Regarding claim 32, representative of claims 34, 36, 38, MacInnis discloses the system of claim 1, wherein each of said pipelines is implemented in software (Column 61, lines 11-14).

15. Regarding claim 52, representative of claim 61, MacInnis discloses the system of claim 1, wherein said graphical data rendered by said first graphics pipeline is destined for a graphical window created by said graphics application and displayed by said display device, and wherein said graphical data rendered by said second graphics pipeline is destined for said graphical window (see above; Figures 61, 69, Column 96, lines 59-61).

16. Regarding claim 53, MacInnis discloses the system of claim 1, wherein said system further comprises: a third graphics pipeline configured to receive graphical data transmitted from said graphics application and to render said graphical data received by said third graphics pipeline; and logic configured to receive a graphical command from said graphics application and to detect whether said graphical command comprises two-dimensional (2D) and three-

dimensional (3D) graphical data, said logic configured to enable said third graphics pipeline to render any 2D graphical data contained in said command and to enable said first and second graphics pipelines to render any 3D graphical data contained in said command (*a video pipeleine and multiple graphics pipelines*, Figures 4, 61, Column 7, line 66 through Column 8, line 9; Column 1, lines 43-67; Figures 64-68, *window state and arbitration*, Column 97- 108; Figure 69, Column 97, lines 57-67, *window descriptor control logic*).

17. Regarding claim 54, representative of claim 58, 59, MacInnis discloses the system of claim 1, wherein each of said first and second graphics pipelines is configured to receive each three-dimensional graphical command transmitted from said graphics application (see above, *Direct Draw,* Figure 1, elements 10, 22, 28; Figure 2, element 64, *graphics accelerator*, Column 7, lines 30-33; Column 109, lines 19-21; *four independent graphics conversion pipelines, graphics controller synchronizes, redirects, selects to write a new line*, Column 112, lines 24-61).

18. Regarding claim 56, MacInnis discloses the system of claim 1, further comprising an interface configured to receive a graphical command from said graphics application (see above). MacInnis does not disclose said interface coupled to said first graphics pipeline via a first local area network (LAN) connection and coupled to said second application via a second LAN connection, said interface configured to transmit said graphical command to said first and second graphics pipelines via said first and second LAN connections. Jenkins teaches said interface coupled to said first graphics pipeline via a first local area network (LAN) connection and

coupled to said second application via a second LAN connection, said interface configured to transmit said graphical command to said first and second graphics pipelines via said first and second LAN connections (Figures 13, 62, Column 75-76; *ICN interconnection networks,* (Interconnection Cached Network)). The motivation for combining pipeline processing with networks is for distribution of the client-server display system (Column 75, lines 24-26). Jenkins is evidence that, at the time of the invention, it would have been obvious for one skilled in designing pixel processing machines, to combine the benefits of multiple pipeline processing, as MacInnis discloses, with a networked processors, as Jenkins teaches, to distribute a client-server display functionality.

Claim Rejections - 35 USC § 103

19. Claims 9, 11, 13, 17, 20, 24, 29, 55, 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacInnis, et al, U.S. Patent 6,573,905 and Jenkins, U.S. Patent 6,111,582, with respect to claim 1, in further view of Duluk, Jr. et al, U.S. Patent 6,525,737.

20. Regarding claim 9, representative of claims 11, 13, 17, 20, 24, 29, 55, 60, MacInnis discloses the system of claim 1, wherein: said first graphics pipeline is configured to receive an input identifying a first coordinate range (*windows descriptors, x, y, window controller,* Column 15, lines 51-53), said first graphics pipeline configured to discard (*blending, layers, at some point, there can be a single image representing the lower layers,* (Column 47, line 60-65), Column 45, line 55 through Column 51, line 33), based on said first coordinate range, a first portion of said graphical data transmitted from said graphics application, said first portion

associated with coordinate values outside of said first coordinate range; and said second graphics pipeline is configured to receive an input identifying a second coordinate range, said second graphics pipeline configured to discard, based on said second coordinate range, a second portion of said graphical data transmitted from said graphics application, said second portion associated with coordinate values outside of said second coordinate range (*windows descriptors, x, y, window controller,* Column 15, lines 51-53).

MacInnis does not disclose a second portion of said image is based on said second graphical data portion, rendering said first and second graphical portions of the image. Jenkins teaches multiple pipelines (Column 60, lines 29-63); wherein said first and second images define at least a portion of a image; second rendering means for rendering a respective second portion of said graphical data, said second rendering means including a plurality of pipeline means for rendering said second graphical data portion in parallel and a compositing means for compositing said second rendered portion (Figures 1-4, Figure 13A, *sub-images, being handled by one of the sub-image processors,* Column 17, lines 52-55). The motivation for combining multiple pipeline processing with multiple sub-images with respective rendering means is for efficient use of available connection bandwidth and allow rapid synchronization with broadcast event stream, load balancing, computational efficiency, level of detail and resolution suited to human needs (Column 114, lines 51-54, 63-63; Column 117, lines 1-6, 24, 38-40, 48-50, 63-67, Column 118, lines 1-9, 17-28, 36-38, 55-65). Jenkins is evidence that at the time of the invention it would have been obvious to one skilled in the art of computer graphics processing to combine the benefits of parallel pipeline processing, as MacInnis discloses, with multiple sub-images rendering, as Jenkins teaches, for performance and display efficiencies.

MacInnis does not disclose discard without rendering. Duluk teaches discard without rendering (Figure 17, Column 20, lines 41-42, *b) discard any primitive that is completely outside the display screen; not to effect the final rendered image...is done in GEO*, see Geometry Processor, GEO, Figure 4, *clip test* Column 4, lines 4-10). The motivation for combining pipeline processing with discard objects without rendering is to increase performance by eliminating computationally expensive calculations (Column 4, lines 7-10). Duluk is evidence that at the time of the invention, it would have been obvious for one skilled in designing pixel pipeline processing machines, to combine the benefits of pipeline processing, as MacInnis discloses, with discarding without rendering objects outside the screen space, as Duluk teaches, to increase processing performance.

Response to Arguments

21. Applicant's arguments with respect to claims 1-61 have been considered but are moot in view of the new ground(s) of rejection.

22. Applicant makes assertion that a double patenting rejection is improper until such applications issue as patents.

Examiner notes that, since previous communications, two of the related applications have now issued: 09/715882, now U.S. Patent 6,621,500; and 09/715232, to be U.S. Patent 6,680,739.

23. Applicant asserts (Page 20, 2nd Paragraph; Page 25, 1st Paragraph; Pages 27-28) that MacInnis fails to disclose claims 1, 18, 43, 48 features of two distinct graphics pipelines receiving from a graphics application graphical data and each rendering an image on a display; nothing cited to indicate that a single graphical command is to control graphics for multiple windows; receive/controlling first and second pipeline portions; render portions of a 3D graphical object in a single window using multiple pipelines.

Examiner respectfully replies, however, that, as noted in paper number 8, the later MacInnis reference, U.S. Patent 6,573,905, MacInnis discloses multiple graphics pipelines dedicated to just graphics display processing (Figure 69, Column 112, 24-40) receiving graphical data sent from a graphics application (*Direct Draw, graphics accelerator,* Figure 3, elements 54, 56, 64, 74, Column 5, line 27, Column 6, lines 29-32; Column 7, lines 30-32; Column 58, line 50 through Column 59, line 12, *3D effects such as texture mapping...polygon shading*). In Figure 61, MacInnis discloses multiple graphical logical objects (windows with graphical data) merging into one graphics image (Column 96, line 55 - through Column 97, line 12; Column 120, lines 4-15).

MacInnis discloses pipeline communications synchronization logic in Figures 7 and 8, (Column 13, lines 2-22, *raw graphics data, pixel map, window descriptors*).

Furthermore, the Examiner respectfully replies that the plural word "created by software applications" at Column 96, line 42 is interpreted by the Examiner to mean that the design is able to run in various commercial 3D application programming environments, *Direct Draw, Open GL*, etc.

24. Applicant asserts (Page 22, 1st – 2nd Paragraphs), regarding claim 4, MacInnis fails to disclose supersampling in first and second pipelines for portions of the graphical object.

The Examiner respectfully notes, however, MacInnis discloses supersampling in multiple pipelines using object-based processing (Figure 17, Column 33, lines 27-29; 60-65; Figure 68, Column 106, lines 15-43).

25. Applicant asserts (Page 23, 1st – 2nd Paragraphs), regarding claims 7 and 15, that MacInnis fails to disclose sending graphical commands to any of the other pipelines.

The Examiner respectfully replies however, that MacInnis discloses pipeline communications synchronization logic in Figures 7 and 8, Column 13, lines 2-22, *raw graphics data, pixel map, window descriptors*).

26. Applicant states, regarding claim 21, that MacInnis does not disclose graphics pipelines render in parallel from the same graphical command (Page 25, 2nd Paragraph) .

Examiner respectfully replies, however, that MacInnis discloses *in parallel* from the same graphical command (Column 45, line 11; Column 26, lines 14-16; 22-44).

Conclusion

27. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen E. Quillen whose telephone number is (703) 605-4584. The examiner can normally be reached on Tuesday – Friday, 8:30am – noon and 1:00 - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew C. Bella, can be reached on (703) 308-6829.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or FAX'd to:

(703) 872-9314 (for Technology Center 2600 only)

Hand delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Sixth Floor (Receptionist), Arlington, Virginia

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number (703) 305-9600 or (703) 305-3800.

Allen E. Quillen
Patent Examiner
Art Unit 2676

***January 7, 2004

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600